

OPTICAL SURFACE PROFILING SYSTEMS

ABSTRACT

An interferometric surface profiler implements a lenslet array to accommodate a large field of view (FOV) without a corresponding loss in light efficiency. Using the lenslet array, the optical surface profiler multiplexes the measurement of an interference phase over multiple spots on a measurement surface, with each spot corresponding to an element of the lenslet array. The FOV of the profiler corresponds to the area of the measurement surface spanned by the spots, and each lenslet element provides a large numerical aperture for each spot, thereby improving light efficiency. The large FOV and increased light efficiency are useful in scanning white light interferometry, as well as other types of interferometric analysis of surface form and roughness such as phase shifting interferometry.

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15